SONY

3-753-238-22(1)

# *Video/Computer Interface*

*Operating Instructions*

CI-1000

**Vbox**

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## Owner's Record

The model and serial numbers are located on the bottom of the product. Record these numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. CI-1000 Serial No. _____

## Warning

**To prevent fire or shock hazard, do not expose the unit to rain or moisture.**

## Radio and Television Interference

The equipment described in this manual generates and uses radio-frequency energy. If not installed and used properly, that is, in strict accordance with the instructions in this manual, it may cause interference to radio and television reception. This equipment has been tested and complies with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation.

You can determine whether your Vbox interface is causing interference by turning it off. If the interference stops, it was probably caused by the Vbox interface. If the Vbox interface does cause interference to radio or television reception, try to correct the interference using one or more of the following measures.

- Reorient the television or radio antenna.
- Relocate the Vbox interface with respect to the television or radio.
- Move the Vbox interface away from the television or radio.
- Plug the Vbox interface into an outlet that is on a different circuit from the television or radio.

If necessary, consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission: "How to Identify and Resolve Radio-TV Interference Problems" (stock number 004-000-00345-4). This booklet is available from the US Government Printing Office, Washington, DC 20402.

The shielded interface cables recommended in this manual (the ViSCA, LANC, and CONTROL-S cables supplied) must be used with this equipment to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC rules.

**Notice for the customers in Canada**
This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

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# Introduction

## Overview of the CI-1000 Vbox Video/Computer Interface

This Vbox™ Video/Computer Interface is the key to integrating video cameras, recorders, and display devices into the personal computer environment. By implementing Sony's ViSCA™ *1 machine control protocol, the Vbox interface allows you to create a multimedia network. You can use the Vbox interface to connect Sony video products to your computer. Then, with an application software package that is compatible with the ViSCA protocol, you can cue and control your video peripherals, bringing the power of multimedia to your desktop.

The Vbox interface contains an 8-bit proprietary microprocessor that converts ViSCA commands generated by your application software into instructions your video peripherals can understand.

The Vbox interface is equipped with the following ports:

- ViSCA In – Used to connect the Vbox interface to your computer.
- ViSCA Out – Used to connect the Vbox interface to another Vbox interface in a daisy chain.
- LANC – Used to connect the Vbox interface to Sony video devices with a LANC *2, CONTROL-L, or REMOTE port.
- CONTROL-S – Used to connect the Vbox interface to Sony video devices with a CONTROL-S *3 port.

One important feature of the Vbox interface is its ViSCA Out port. Using this port, you can daisy-chain up to seven Vbox interfaces together, creating an extensive multimedia network of many video devices that you can control from your application software.

**The Vbox interface is platform independent. In order to control the video peripherals you connect using the Vbox interface, you must have an application software package that supports the ViSCA protocol. This application software is not included with the Vbox interface.**

The Vbox interface can be connected to Sony consumer video products that feature a LANC port (also labeled as , CONTROL-L, or REMOTE) or a CONTROL-S port.

*1 ViSCA is Sony's Video System Control Architecture.
*2 LANC is Sony's Local Application Control bus, a bi-directional wired command protocol designed by Sony to control video devices. LANC ports may also be labeled as , CONTROL-L or REMOTE ports.
*3 CONTROL-S is the wired version of Sony's infrared remote control bus used in monitors, AV selectors, and other video equipment.



## How to use this manual

This manual is divided into the following four chapters: Introduction, Getting Started, Operation, and Additional Information.

Chapter 1, "Introduction" provides an overview of the Vbox interface and this manual.

Chapter 2, "Getting Started" includes the basic information you need to get started with the Vbox interface.

Chapter 3, "Operation" explains how to set up the Vbox interface with your computer and video devices (LANC or CONTROL-S).

Chapter 4, "Additional Information" includes a troubleshooting section and a glossary. If you have any problems in setting up or operating the Vbox interface, refer to this section first before calling your local Sony dealer.

For the operating instructions of the computer and video equipment to be connected using the Vbox interface, refer to the manuals provided with them.

# Getting Started

## Unpacking

The first thing to do is make sure you have the Vbox interface as well as the accessories you need to set up the Vbox interface. Take all the items unpacked and verify that you have everything shown below. In addition to the items listed below, your Vbox interface package should include an Owner Registration Card, a list of Vbox compatible Sony products, and a warranty card. Be sure to fill out the Owner Registration Card and mail it in.

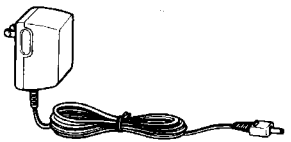
CONTROL-S cable (Mini-Plug) ..... (1)

LANC cable (5-pin Mini-DIN/5-pin Mini-DIN) ..... (1)

LANC cable (5-pin Mini-DIN/Mini-Plug) ..... (1)

ViSCA cable (8-pin Mini-DIN/8-pin Mini-DIN) ..... (1)

AC power adaptor ..... (1)

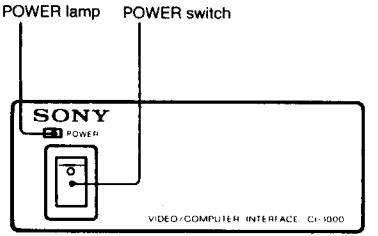




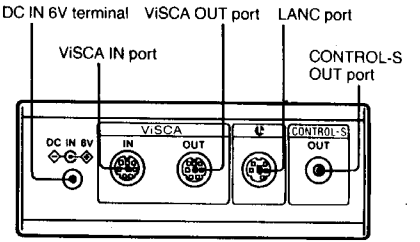
## Taking a closer look

Now that you have your Vbox interface unpacked, take a closer look so you're familiar with its parts. Everything you connect to the Vbox interface attaches to connectors, or ports, on its back panel. These are discussed in more detail in chapter 3, "Operation."

Front view




Rear view



## Required computer hardware

- A host computer with a serial port, such as an Apple® Macintosh®, IBM® PC, IBM-compatible machine, or Commodore® Amiga®. The minimum system configuration required is determined by the application software you choose.
- An RS-232C/8-pin Mini-DIN cross cable will be necessary if you're connecting the Vbox interface to a computer other than an Apple Macintosh computer, and it must be purchased separately.
- A video conversion board may be necessary, depending on your software, and must be purchased separately. The Vbox interface will operate with any video conversion board that is compatible with your application software.

## Compatible video devices

Video equipment and peripherals

- Sony video devices with a LANC, CONTROL-L, or REMOTE port.
  - 8mm format VCRs
  - VHS format VCRs
  - Betamax™ VCRs
  - 8mm Camcorders
- Sony video devices with a CONTROL-S port.
  - AV selectors
  - Monitors

Through the Vbox interface, you can control the major functions of video devices with a LANC port and a limited number of functions–such as input select, volume, and channel select–on video devices with a CONTROL-S port.

The types of functions you can control with the Vbox interface may vary depending on your video device. Consult the compatibility card found in this package or call Sony's Customer Information Center at (201) 930-SONY (7669), (708) 250-7669, or (714) 821-7669 for details. When your video device is part of a Vbox system, it may appear that your video device can perform functions not listed in its user manual. Executing unsupported commands may cause damage to tape or your video device itself.

## Required software

– ViSCA-compatible application software
You can use any application software that is compatible with the ViSCA protocol.

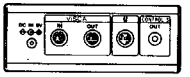


# Operation

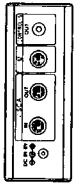
## Setting up your Vbox interface

Before connecting the Vbox interface to your computer, check whether your video device has a LANC port or CONTROL-S port or both. If your device has both, you should use the LANC port connection. Moreover, if you wish to link several Vbox interfaces, refer to the section "Using the daisy chain connection" on page 13.

The Vbox interface can function properly flat or on its side.

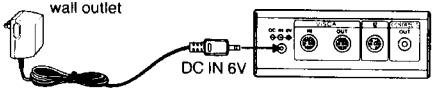


OK



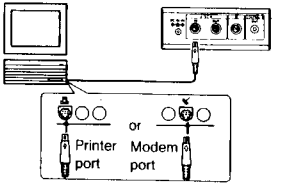
OK

**1.** Connect the supplied AC power adaptor.
Plug the socket end of the power adaptor into the DC power input on the back of the Vbox interface. Plug the other end of the adaptor into a wall outlet. Before plugging in your Vbox interface, make sure the power switch is in the OFF position.

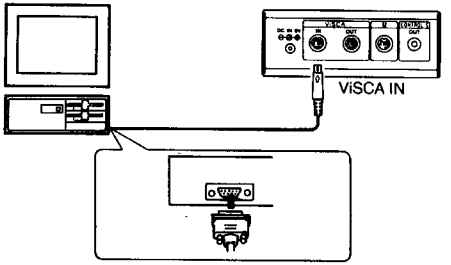



**2.** Connect the computer to the Vbox interface.

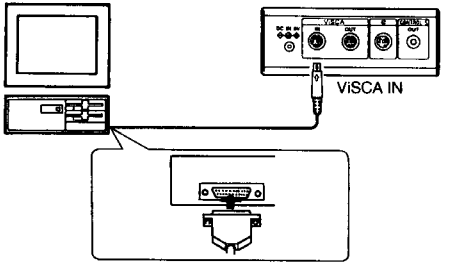
- If you have an Apple Macintosh computer, connect either end of the ViSCA cable to the printer port or modem port on the back of the Macintosh. Connect the other end to the ViSCA In port on the Vbox interface.



- If your computer is equipped with a DB9 (9-pin D-sub) serial port, you need to use a cross-type DB9 RS-232C/8-pin Mini-DIN cable. This cable must be purchased separately.




- If your computer is equipped with a DB25 (25-pin D-sub) serial port, you need to use a cross-type DB25 RS-232C/8-pin Mini-DIN cable. This cable must be purchased separately.




**Note:** If your printer and modem ports are already being used, you must disconnect to one of these devices in order to use the Vbox interface.

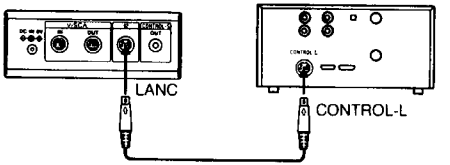


**3.** Connect the video device(s) to the Vbox interface.
You may connect both a LANC device and a CONTROL-S device to your Vbox interface and operate them simultaneously.

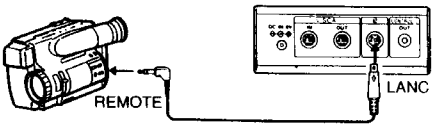
a) Connecting LANC devices

LANC devices are those Sony video devices that are equipped with a LANC, , CONTROL-L, or REMOTE port.

- If your video device is equipped with a round 5-pin DIN LANC port, use the round 5-pin Mini-DIN/5-pin Mini-DIN LANC cable. Connect either end of the LANC cable to the LANC port on your video device. Connect the other end to the LANC port on the Vbox interface.



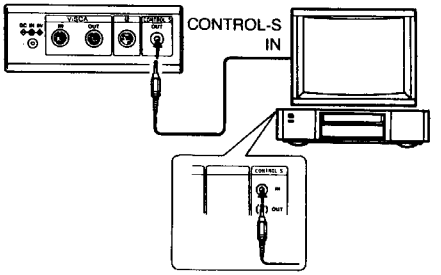

- If your video device is equipped with a mini-plug LANC port, as are many Sony camcorders, use the supplied 5-pin Mini-DIN/Mini-plug LANC cable. Connect the mini-plug end to the video device and the round DIN end to the LANC port of the Vbox interface.



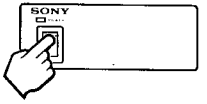

**Note:** Some LANC devices have an S/M or SLAVE/MASTER position setting feature. When connecting one of these devices to your computer using the Vbox interface, be sure to set the device to the S or SLAVE position. This allows the device to receive command signals from the Vbox network. (Refer to your video device user's manual for details.)

b) Connecting CONTROL-S devices

Connect the Sony device equipped with a CONTROL-S or CONTROL-S In port using the supplied CONTROL-S cable. Attach either end of the cable to the CONTROL-S In port of the video device. (Note: Some devices have a CONTROL-S Out port; the video device will not function if the CONTROL-S cable is attached to this port.) Attach the other end of the cable to the CONTROL-S Out port of the Vbox interface.




**4.** Switch the Vbox interface power switch to the ON position.



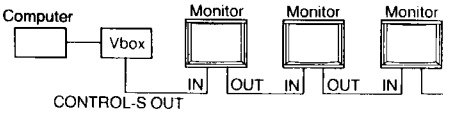

**5.** Start up the application software on your computer.

**Note:** Some video devices will be powered on automatically when the power switch of the connected Vbox interface is turned on. This will not cause any problems with the Vbox interface or your video device.



## CONTROL-S loop-through connections

Some video devices such as monitors have CONTROL-S In and Out ports. This allows you to connect several devices to the CONTROL-S Out port of one Vbox interface (as shown below) and pass one command to all the devices on the loop. All similar devices connected to one Vbox interface in a loop-through link, however, will do the same thing at the same time. To operate CONTROL-S devices independently, you must connect them to different Vbox interfaces. Some VCRs have different command modes for independent control in a loop-through link. (Refer to the user's manual of your CONTROL-S device for details.)



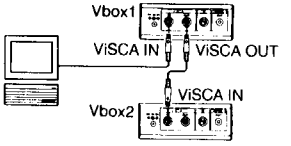

## Using the daisy-chain connection

You can link up to seven Vbox interfaces to one computer serial port over a daisy-chain network.

Complete steps 1 through 3 under "Setting up your Vbox interface" and then continue with step 4 below.

**4.** Connect the second Vbox interface to the first Vbox interface using the supplied ViSCA cable.

Connect either end of the ViSCA cable to the ViSCA Out port of the first Vbox interface and the other end of the ViSCA cable to the ViSCA In port of the second Vbox interface. You can connect up to seven devices in this manner. (Note: You should not connect the last box back to the computer and the last box in the chain does not require a cable to be connected to its ViSCA Out port.)



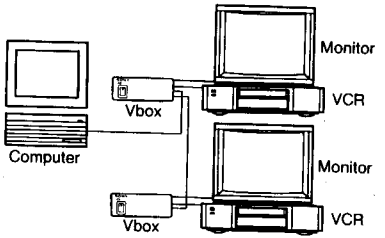
5. Connect the video device(s) to each Vbox interface in the same manner that you attached them to the first Vbox interface. (Refer to step 3 of "Setting up your Vbox interface".)

6. Switch the power switch for each Vbox interface to the ON position.

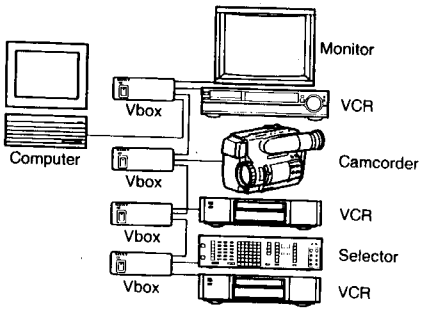
7. Start up the application software on your computer.

**Examples of a daisy-chain network**

Example A.




Example B.






# Additional Information

## Precautions

**Operation**

- Operate the Vbox interface on 6.0 V (AC power adaptor).
- Use the accessories supplied or recommended by your dealer.
- Should any solid object or liquid fall onto the cabinet, unplug the Vbox interface and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the Vbox interface.
- Allow adequate air circulation to prevent internal heat build-up.
- Avoid using and storing the Vbox interface in the following locations:
  - — Locations susceptible to vibration
  - — Locations exposed to strong magnetic fields
  - — Locations near TV or radio transmitters where strong radio waves are generated

**Care**

- Clean the Vbox interface body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution.

## Specifications

| | |
|---|---|
| ViSCA In port | 8-pin Mini-DIN (1) |
| ViSCA Out port | 8-pin Mini-DIN (1) |
| LANC port | 5-pin Mini-DIN (1) |
| CONTROL-S OUT port | Minijack |
| DC 6V In | EIAJ standard RC-7606A type jack |
| Power requirements | 6V DC |
| Power consumption | 0.5W (Max) |
| Operating temperature | 0°C to 40°C (32°F to 104°F) |
| Storage temperature | −20°C to +60°C (−4°F to 140°F) |
| Operational position | Horizontal and Vertical |
| Dimensions | Approx. 106×40×163 (w/h/d) (4.2×1.6×6.5 inches) including projecting parts and controls |
| Weight | Approx. 500g (1.1 lb) |

Supplied accessories

CONTROL-S cable (Mini-Plug) (1)
LANC cable (5-pin Mini-DIN/5-pin Mini-DIN) (1)
LANC cable (5-pin Mini-DIN/Mini-Plug) (1)
ViSCA cable (8-pin Mini-DIN/8-pin Mini-DIN) (1)
AC power adaptor (1)

**Note on the AC power adaptor**

Use only the supplied power adaptor.

Polarity of the plug

Design and specifications are subject to change without prior notice.



## Vbox interface troubleshooting guide

[NOTE: Terms in **boldface** are defined in the glossary.]
If your Vbox system is not operating properly, check the following.

**The ViSCA network**

The video system does not work at all and does not respond to commands sent from the software.

a. Are all Vbox interfaces switched on? Are all power indicators lit?

All Vbox interfaces must be powered on for the commands to be sent through the network properly.

b. Is each cable connected to the proper **port**? Are the ViSCA In and ViSCA Out cables connected correctly?

The ViSCA In cable should be connected to a **serial port** on the back of your computer or the previous Vbox interface on the network; if your network has more than one Vbox interface, any ViSCA Out cables should be connected to the next Vbox interface on the network. If there is only one device connected to your computer, a ViSCA Out cable is not needed.

c. Connect to your computer one Vbox interface at a time to verify that each Vbox is functioning properly. The problem may be with one cable in the network.

**The Vbox interface**

The Vbox interface power indicator is not lit.

a. Is the AC adaptor securely plugged into a wall outlet?

b. Are you using the power adaptor that is supplied with the product?

**Video device on the network**

The ViSCA network is working but a specific **video device** does not work.

a. The device does not respond to commands from the computer (If your video device is a video camera, please refer to "Camcorder tips" below.)

- Make sure that video device power switch is in the ON position.
- Check to see that the device works independently of the ViSCA network; disconnect it and verify that it functions properly. Refer to the user's manual of the video device.
- Is the video device supported by Vbox and your application software?
  Although ViSCA is designed to support all **LANC** products, there may be models that are not 100% ViSCA-compatible for all functions. Moreover, since **CONTROL-S** is not designed for the level of control necessary for computer applications, ViSCA only supports limited **CONTROL-S** devices and commands. Finally, your application may not support products that are otherwise compatible with ViSCA.
- Verify that all cables are connected properly.
  For LANC devices, the LANC cable should be connected to a port that is labeled LANC, , REMOTE, or CONTROL-L.

  For CONTROL-S devices, the CONTROL-S cable should be connected to a port that is labeled CONTROL-S or CONTROL-S In. (The cable should not be connected to a port that is labeled CONTROL-S Out.)
- If your LANC device includes an S/M or SLAVE/MASTER position setting feature, be sure to set it to the S or SLAVE position. This allows the device to receive command signals from the Vbox network. (Refer to your video device user's manual for details.)

b. The video device does not perform a specific function.

The functionality of the Vbox system depends on the level of the video device. Different products offer different feature sets; the software application may be designed to take advantage of a feature found only in high end products. For example, different video devices offer different degrees of **search accuracy**. In other words, performance of the Vbox system may be limited by the capabilities of your video devices. Make sure to use a video device that is supported by the software application you are using.

**Camcorder tips**

Since the fundamental design of cameras is different than that of VCRs, the following special tips apply. If your camcorder does not function properly within the Vbox system, check the following.



- Is the camcorder's power switch in the correct mode setting?
  The power switch may be set to either CAMERA or VCR. If you will be controlling the camcorder as a camera (for example, controlling zoom for live video) the power switch must be set to CAMERA. If, on the other hand, you are using the camera as a VCR (for example, controlling playback, record, etc.) the power switch must be set to VCR.
- Does your camcorder have only one set of audio/video jacks?
  If you are recording Video signals from the camcorder to another device, the camcorder should be operating in OUTPUT mode. If you are using the camcorder as a VCR, and recieving signals from another device (such as your computer) for receiving, the camcorder should be operating in INPUT mode. (Please refer to the camcorder user's manual for details.)

**Software**

If the Vbox system is not working properly it may be due to the application software you are using. Contact the manufacturer of your software to check the following .

a. Confirm that the software is compatible with the ViSCA protocol.

b. Make sure that the devices you are using are supported by your software.

c. Verify that you are properly using the application software; refer to your software user's manual.

**Other situations:**

a. The video device is powered on when the Vbox interface is powered on.

This will occur with some LANC devices and is nothing to worry about.

b. There is no place to connect the ViSCA In cable to your computer.

The Vbox interface package includes a ViSCA 8-pin DIN cable for use with Apple Macintosh computers. If your computer is not a Macintosh, you must purchase a cross-type cable with an 8-pin DIN connector on one end and an RS-232C connector on the other end. Depending on your computer's serial port, your cable should either have DB9 (9-pin D-sub) RS-232C connector or a DB25 (25-pin D-sub) RS-232C connector. Consult your computer manual to verify the type of serial port your computer has.

## Glossary

**Audio/video jacks** — A connector on **video device** to which the **video cables** are attached to send video signals between devices.

**Camcorder** — A device that is both a video camera and a video cassette recorder.

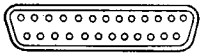
**CONTROL-S** — A one-way wired command protocol designed by Sony to control specific video devices. Because it is a one-way protocol, CONTROL-S can be used only to send information from the computer to a video device; it cannot be used to send information from the video device back to the computer.

**Cross-type cable** — A type of cable configuration in which the send and receive lines are cross-connected. Also known as a NULL-MODEM cable. (**RS-232C** cables can be configured with wires that are crossed or not crossed.)

**Daisy chain** — To link together sequentially from a single computer port.

**DB9 cable** — A connector at the end of a cable that has nine pins inside a shell shaped like a trapezoid.

**DB25 cable** — A connector at the end of a cable that has 25 pins inside a shell shaped like a trapezoid.



**5-pin DIN connector** — A type of cable that has 5 pins inside a round shell. This is one format for standard LANC VCRs.

**8-pin DIN connector** — A type of cable that has 8 pins inside a round shell. This is the format for standard Macintosh printer and modem cables.

**LANC** — An acronym for the Local Application Control bus. A bi-directional wired command protocol designed by Sony to control video devices. Because it is bi-directional, it can be used to send commands from the computer to a video device as well as return status information and messages from the device to the computer.

**Loop through** — A method of connecting several like video devices (usually monitors) so that all can receive the same signal. Each monitor receives the signal through an IN port and passes the signal to the next monitor through an OUT port. (The signal is looped through each monitor.)

**Mini-plug** — A connector used in earphones, microphones, and other devices.

**Modem port** — See serial port.

**NTSC** — National Television Standard Committee. The committee that defined the standard format for audio and video television signals used in the United States and Japan.

**Port** — A socket on the back panel of a computer or device where you can plug in a cable to connect a Vbox interface.

| | |
|---|---|
| **Printer port** | See **serial port.** |
| **RGB** | Red, Green, Blue. The standard format for computer video signals. |
| **RS-232C cable** | A type of cable used for communicating with serial devices, such as modems, printers, and the Vbox interface. |
| **Search accuracy** | The degree of accuracy to which a video device can find a specific frame of video. |
| **Selector** | A device that allows you to control and direct audio and video signals to and from multiple sources. |
| **Serial port** | A connector for peripheral devices that receives data in a serial format (that is, one bit at a time), such as the printer and modem ports on a Macintosh. This is the port to which you would connect a Vbox interface. |
| **Video cable** | A cable that carries RGB or NTSC video signals. |
| **Video conversion board** | A circuit board that includes the processors necessary to convert computer **(RGB) video signals** into television **(NTSC) video signals** or vice-versa. |
| **Video device** | A VCR, camcorder, monitor, or selector that plays, displays, directs, and/or records video signals. |
| **Video signal** | An electronic signal that contains information for displaying images. |
| **VISCA** | An acronym for Video System Control Architecture, a machine control protocol designed by Sony to allow synchronized control of up to seven Vbox interfaces on a daisy chain. |

## Important notice

The computer industry lacks standards, and therefore, there are a multitude of varying software packages and add-on hardware options. This product is not manufactured to any specific software, and Sony does not and cannot make any warranty or representation with respect to the performance of this product with any particular software packages and/or non-Sony add-on hardware options except those mentioned in this manual. Sony hereby disclaims any representations of warranty that this product is compatible with any combination of non-Sony products you may choose to connect. In addition, capabilities provided with the product will vary depending upon the application software program chosen and video peripherals used. Sony makes no guarantees as to functionality with specific Sony video equipment or non-Sony application software packages. While Sony representatives or Sony dealers may be able to assist you and may make recommendations, they are NOT authorized to vary or waiver this disclaimer. Purchaser must determine for himself the suitability and compatibility of this hardware and software in each and every particular instance.

Consumer products are not designed for computer use; using the Vbox interface with consumer products does not guarantee performance levels equivalent to institutional or business use.

The types of functions you can control with the Vbox interface may vary depending on your video device. Consult the compatibility card found in this package or call Sony's Customer Information Center at (201) 930-SONY (7669), (708) 250-7669, or (714) 821-7669 for details. When your video device is part of a Vbox system, it may appear that your video device can perform functions not listed in its user manual. Executing unsupported commands may cause damage to tape or your video device itself.

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